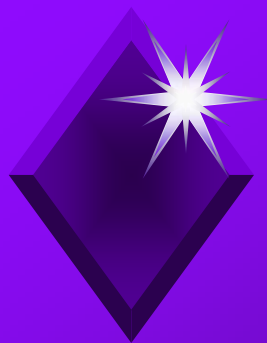


Maintenance

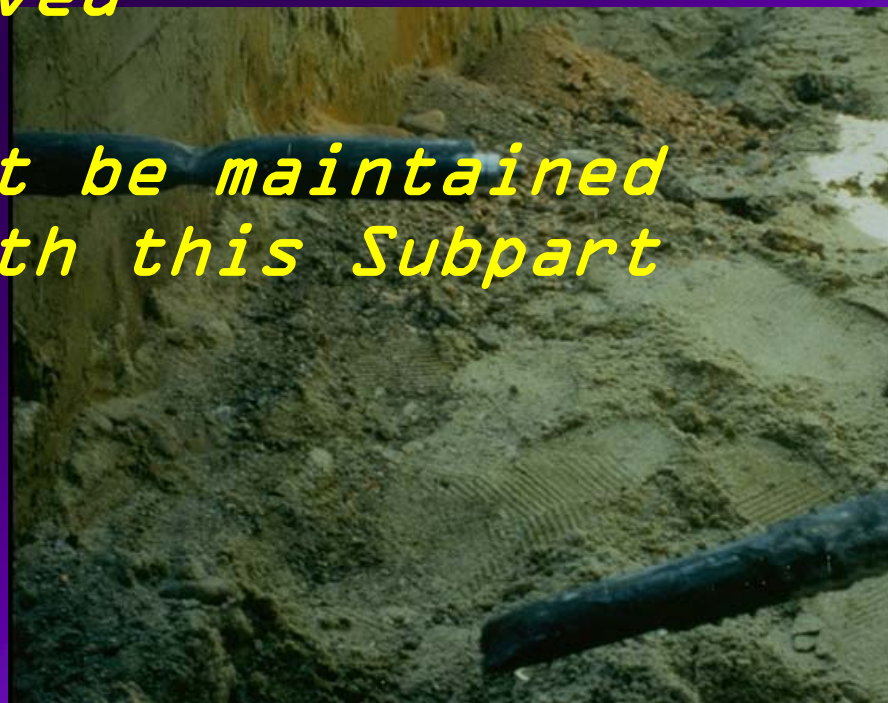
Subpart "M"





192.703 General

- x Each unsafe segment must be repaired, replaced or removed*
- x Each segment must be maintained in accordance with this Subpart*
- x Hazardous leaks must be repaired promptly*



192.705(a)

Transmission Lines: Patrolling

- x Formal program to observe for leaks, construction activity, and other factors affecting safety*



192.705(b)

Transmission Lines: Patrolling

x Frequency of Patrols

x Walking

x Flying

x Driving

x Other



Class

1,2

3

4

Highway & Rail

2x cal. yr.

4x cal. yr.

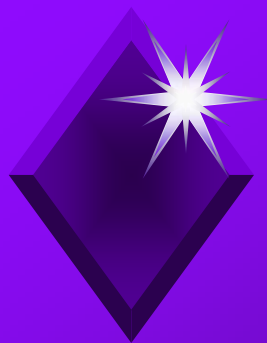
4x cal. yr.

All Other

1x cal. yr.

2x cal. yr.

4x cal. yr.





Transmission Lines Leakage Surveys

- x Transmission lines must be surveyed annually, not to exceed fifteen months.*
- x Except class 3 & 4 areas transporting unodorized gas.*



192.707(a)

Line Markers for Mains and Transmission Lines

x *Marker must be placed as close as practical and maintained;*

x *At each crossing of public road & railroad; and*



192.707(a)

Line Markers for Mains and Transmission Lines

- x Wherever necessary to identify location to reduce possibility of damage or interference*



192.707(b)

Line Markers for Mains and Transmission Lines

- x *Exceptions*

- x *Located offshore, under waterways*



- x *Mains in class 3 & 4 where a damage prevention program is in effect;*



Line Markers for Mains and Transmission Lines

- x Exceptions continued;*
- x Transmission lines in class 3 & 4
where placement is impractical*





Line Markers for Mains and Transmission Lines

*x Aboveground & Accessible to
Public*



192.707(d)

Line Markers for Mains and Transmission Lines

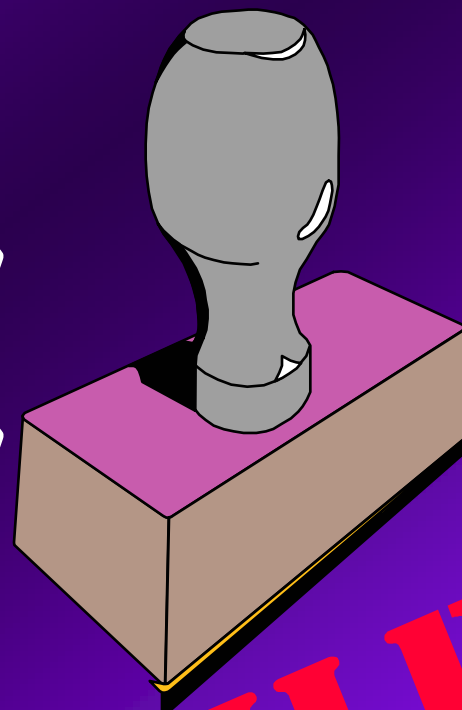
- x Letters of proper size and stroke*
- x "WARNING", "CAUTION", or "DANGER"*
- x "GAS", or name of gas*
- x 24-hour telephone number*





Transmission Line Record-keeping

- x The date, location, and description of each repair to pipe or pipe-to-pipe connections must be retained for life.*



FILE



Transmission Line Record-keeping

- x Leakage Surveys*
- x Patrols*
- x Inspections required by Subparts
L & M*
- x These inspections and repairs
resulting from them, records must
be retained for 5 yrs. or until
the next inspection, whichever is
longer*



192.711(a)(1)

Transmission Lines: Repair Procedures

- x Immediate temporary measures to protect public when line (>40% SMYS) has leak, imperfection, or other damage that impairs serviceability, and*





Transmission Lines: Repair Procedures

- x Not feasible to make permanent repairs at the time.*
- x Shall make permanent repairs ASAP*
- x Welded patches not allowed except as provided by 192.717 (corrosion pit on pipe < 40k SMYS).*

192.713(a)

Transmission Lines: Permanent Repairs

- x *Imperfections or damage on a line > 40% SMYS must:*
 - x *Replace w/ cylinder of similar or greater design strength*
 - x *Repair by method proved reliable by engineering tests & analyses*



192.713(b)

Transmission Lines: Permanent Repairs

*x Maintain safe
operating pressure
during repair
operations*

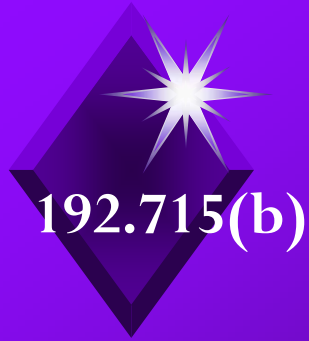




Transmission Lines: Repair of Welds

- x Welds unacceptable per 192.241(c) must be repaired with line out of service per 192.245, or*





Transmission Lines: Repair of Welds

x Repair weld per 192.245 while in service if --

(1) Weld is not leaking;

(2) Pressure reduced to 20% SMYS or less;

(3) At least 1/8 inch wall thickness remains after grinding



Transmission Lines: Repair of Welds

- x If weld cannot be repaired per (a) or (b), must install full encirclement welded split sleeve of appropriate design*



Transmission Lines: Repair of Leaks

*x Cut out and replace cylinder of
pipe, or*



192.717(b)(1)

Transmission Lines: Repair of Leaks

- x Install full encirclement welded split sleeve of appropriate design.*
- x Unless line < 40% SMYS and joined by mechanical couplings*



192.717(b)(2),(3)

Transmission Lines: Repair of Leaks

- x Leaks due to corrosion pits:*
- x Install bolt-on clamps*
- x May use weld patch on
pipe < 40k SMYS*



192.717(b)(4)

Transmission Lines: Repair of Leaks

- x Offshore and in inland navigable waterway may be repaired by **mechanical** split sleeves*



192.717(b)(5)

Transmission Lines: Repair of Leaks

- x Apply method that reliable engineering tests and analyses prove serviceable*





Transmission Lines: Testing of Repairs

- x Replacement pipe must be tested to the pressure required for new line in the same location (ref. 192.619).*
- x May be pre-tested.*





192.719(b)

Transmission Lines: Testing of Repairs

- x Each repair made by welding must be tested in accordance with 192.241.*





Distribution: Patrolling

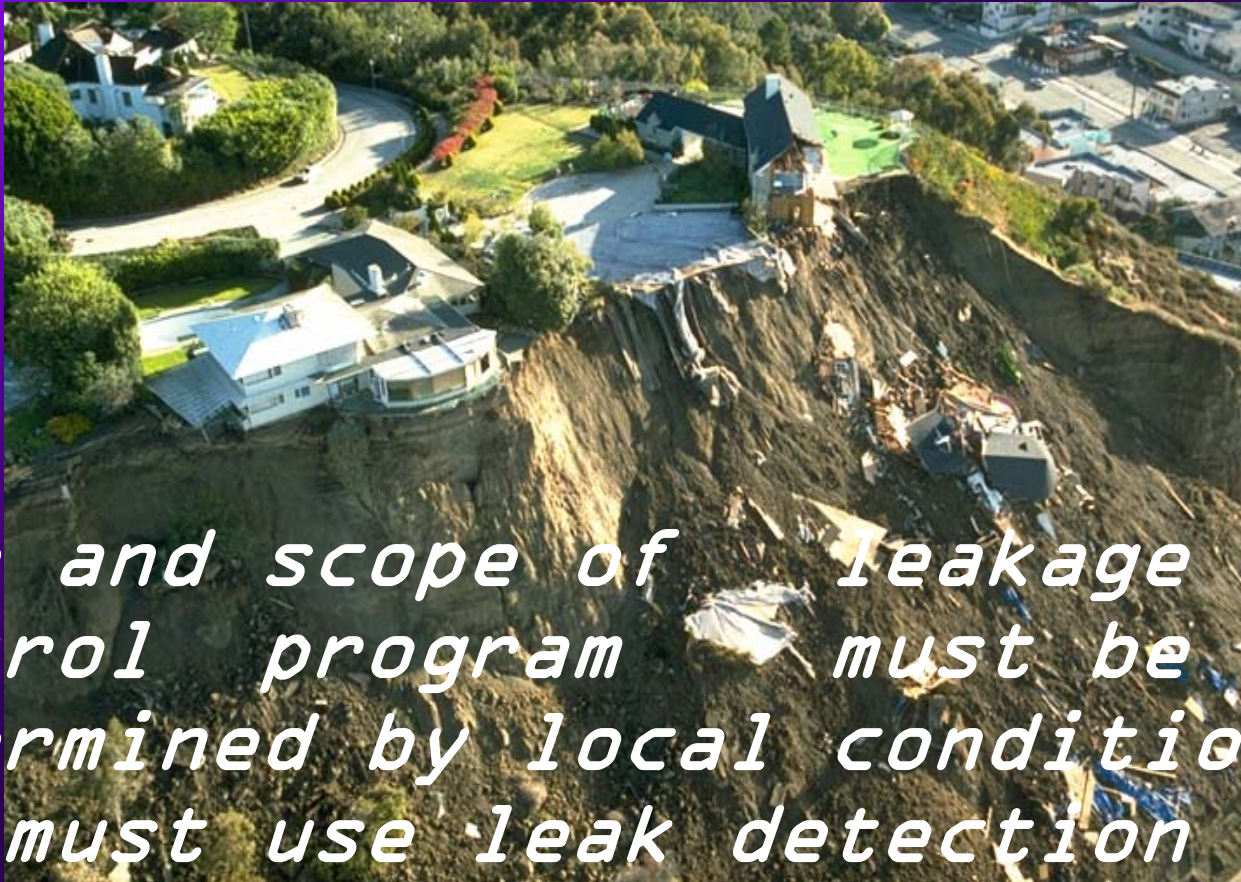
- x Frequency determined by conditions which could cause a hazard*



- x Areas subject to movement/loading must be patrolled 4x/yr. in business districts and 2x/yr. all other areas.*



Distribution Leak Surveys



x *Type and scope of leakage control program must be determined by local conditions, but must use leak detection equipment and meet the following minimums:*



192.723

Distribution Leak Surveys

x *Business Districts - Each
calendar year <15mos.*

Must check:

x *Manholes*

x *Pavement & sidewalk
cracks; and*

x *Other potential
venting locations*





192.723

Distribution Leak Surveys

- x Outside of business district, as frequently as necessary, at least once every 5 years at intervals not exceeding 63 months*
- x Pipe that is not cathodically protected must be surveyed at intervals not exceeding three years when electrical survey is impractical.*





192.725

Test Requirements for Reinstating Service Lines

- x Each disconnected service must be tested in the same manner as a new service.*

(192.511 and 513)



- x Each temporarily disconnected service must be tested from the point of disconnection to the service line valve.*



192.727(b),(c)

Abandonment

x Each pipeline abandoned in place or inactive (not maintained) must;

x Be disconnected from all sources, purged, and sealed.

x Offshore must be filled

x Need not be purged if volume of gas does not present a hazard



192.727(d)

Abandonment

- x When service to a customer is disconnected, must do one of the following:*
 - x Close valve and lock*
 - x Install device to prevent flow of gas*
 - x Disconnect piping and seal ENDS*





192.727(f)

Abandonment

- x Each abandoned vault must be filled with compacted materials*





192.739

Pressure Limiting and Regulating Stations: Inspection and Testing

*x Each Pressure Limiting and
Regulating Station and its
Equipment must be Tested each
Calendar Year not exceeding 15
mo. Intervals to Determine -*

x a) In Good Mechanical Condition;



192.739

Pressure Limiting and Regulating Stations: Inspection and Testing

- x b) Adequate from
the standpoint of
capacity and
reliability of
operation for the
service in which
it is employed;*





Pressure Limiting and Regulating Stations: Inspection and Testing

- x c) Set to Control or Relieve at
the Correct Pressure Consistent
with the Pressure Limits of
192.201; and*

*Note: Changed by Amendment 93
(was "set to function at the
correct pressure")*



Pressure Limiting and Regulating Stations: Inspection and Testing

- x d) *Properly Installed and
Protected from Dirt, Liquids,
or other conditions that might
Prevent Proper Operation.*



Pressure Limiting and Regulating Stations: Telemetering or Recording Gages

- x a) Each distribution system supplied by more than one regulating station must be equipped with telemetering or recording gages...*





Pressure Limiting and Regulating Stations: Telemetering or Recording Gages

- x b) Single Feed Systems; the Operator shall determine the Necessity ... taking into Consideration the Number of Customers Supplied, the Operating Pressures, the Capacity of the Installation, and the Operating Conditions.*



Pressure Limiting and Regulating Stations: Telemetering or Recording Gages

- x c) If there are indications of high or low pressure, equipment must be inspected and necessary corrective actions taken.*



192.743

Pressure Limiting and Regulating Stations: Testing of Relief Devices

New Language per Amendment 93

- x a) Pressure relief devices at ...
stations must have sufficient
capacity to protect the facilities
... connected consistent with
pressure limits of 192.201(a)*



192.743

Pressure Limiting and Regulating Stations: Testing of Relief Devices

New Language per Amendment 93

x a) ~ continued

*Capacity must be determined each
calendar year at intervals not
exceeding 15 months by testing
devices in place or by review and
calculations*



192.743

Pressure Limiting and Regulating Stations: Testing of Relief Devices

New Language per Amendment 93

- x b) ... Calculated capacity must be compared to rated or experimentally determined relieving capacity of the device for the operating conditions.*



192.743

Pressure Limiting and Regulating Stations: Testing of Relief Devices

New Language per Amendment 93

- x b) ... Initial calculations need not be repeated during annual review if parameters have not changed.*

192.743

Pressure Limiting and Regulating Stations: Testing of Relief Devices

- x c) *If the Capacity is Insufficient, a New or Additional Device must be installed to provide the Additional Capacity Required.*





Valve Maintenance: Transmission Lines



annual service

- x (a) Each valve that might be required during any emergency must be inspected and **partially operated***



Valve Maintenance: Transmission Lines



x (b) New per Amendment 93

*Operator must take prompt
remedial action on any valve
found inoperable unless alternate
valve is designated*



Valve Maintenance: Distribution Systems



- x (a) *Each valve, necessary for safe operation of a distribution system, must be checked and serviced.*

192.747

Valve Maintenance: Distribution Systems



x *(b) New per Amendment 93*

*Operator must take prompt
remedial action on any valve
found inoperable unless
alternate valve is designated*



192.749(a)

Vault Maintenance

- x Vaults > 200 cubic ft. must be inspected each calendar year not exceeding 15 mos. for physical condition and ventilation.*





192.749(b)(c)(d)

Vault Maintenance

- x If gas is detected, inspect for and repair leaks.***
- x Inspect ventilating equipment.***
- x Inspect integrity of vault covers.***





192.751

Prevention of Accidental Ignition

- x Each operator must minimize danger of accidental ignition*
- x Remove ignition sources*
- x Provide fire extinguishers*
- x Post warnings*
- x Don't weld around combustible mixtures*